

# Vegetation Assessment of the Gila NF by Means of Ecological Response Units

Mitchel R. White, PhD  
Vegetation Ecologist  
USDA Forest Service Gila National Forest

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## Terrestrial Ecological Response Units (ERUs)



Ponderosa pine/evergreen oak forest ERU

- ★ characterize sites with similar potential
- ★ represent the climax vegetation under natural disturbance regimes and biological processes

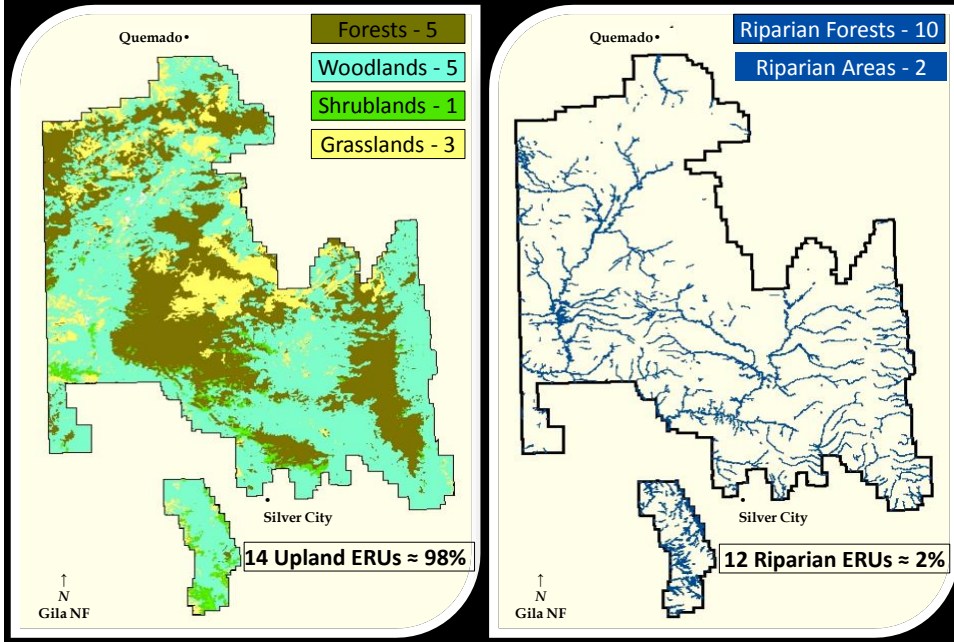
- ★ facilitate landscape scale analysis and strategic planning



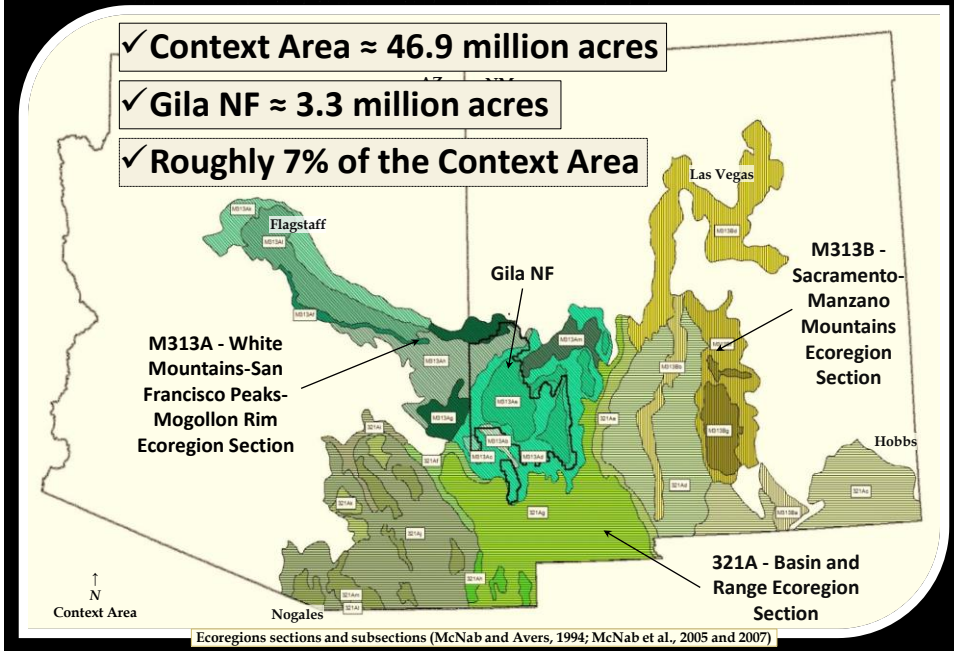
Colorado Plateau/Great Basin grasslands ERU

*ERU = Site Potential + Historic Disturbance Regime*

## Ecological Response Units of the Gila NF



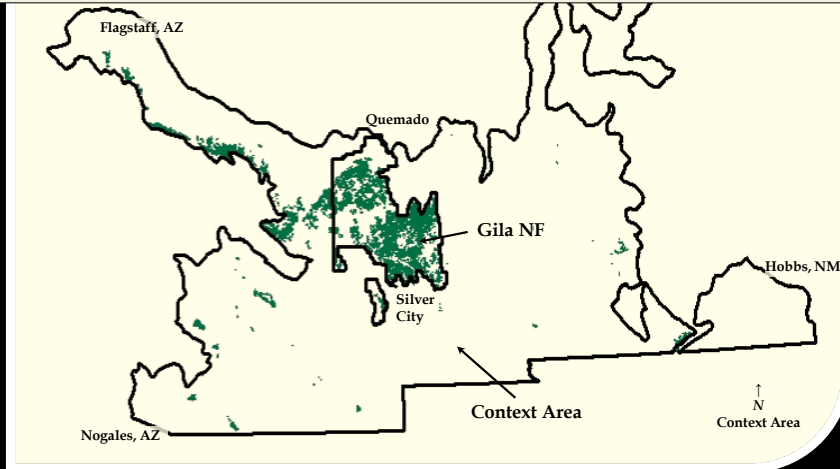
## Context Area Landscape for Gila NF ERU Assessment



## Ponderosa Pine/Evergreen Oak within the Context Area “Spatial Niche”

✓ Ponderosa Pine/Evergreen Oak ≈ 623,000 ac. within the Context Area

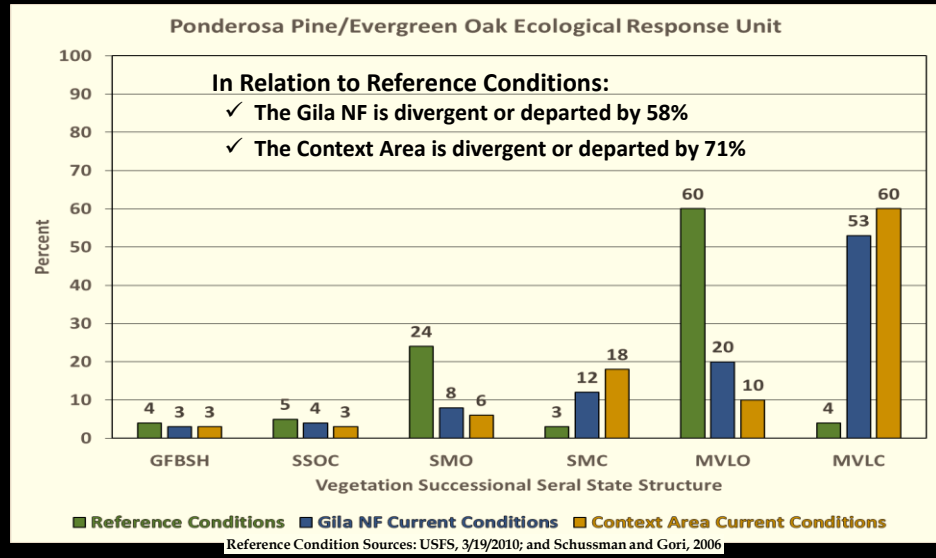
✓ Ponderosa Pine/Evergreen Oak ≈ 378,000 ac. within the Gila NF



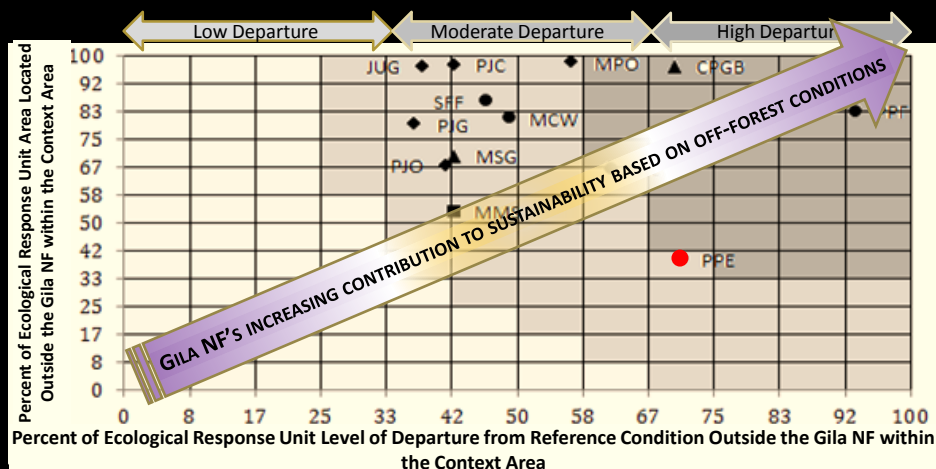
## Ponderosa Pine/Evergreen Oak Forest Ecological Response Unit

- \* within Gila ≈ 378,000 ac or 11.6% of the forest's acreage
- \* within context Area ≈ 623,000 ac or 1.3% of the Context Area's acreage
- \* nearly 61% of this ERU is located on the Gila NF
- \* therefore the Gila has a greater proportional representation than the Context Area

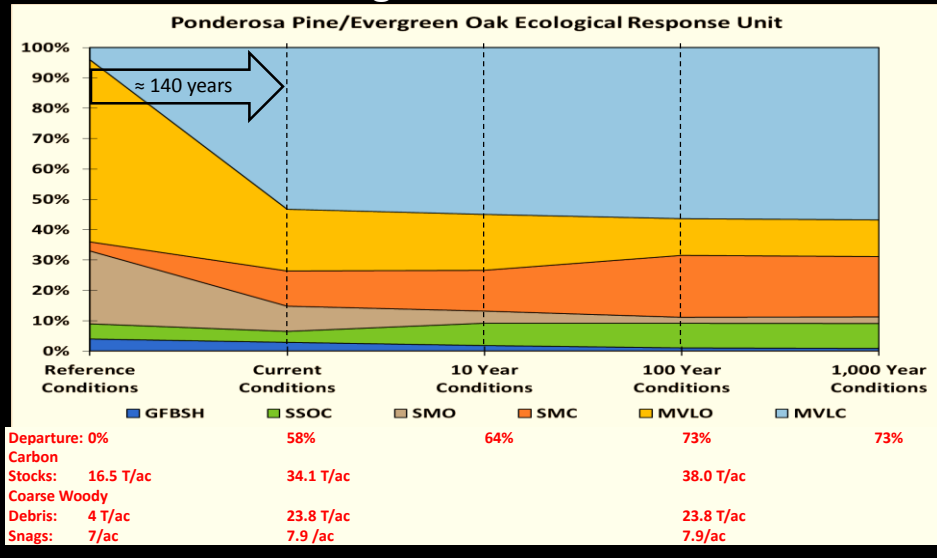
## Vegetation Seral State, Successional Structure and Composition



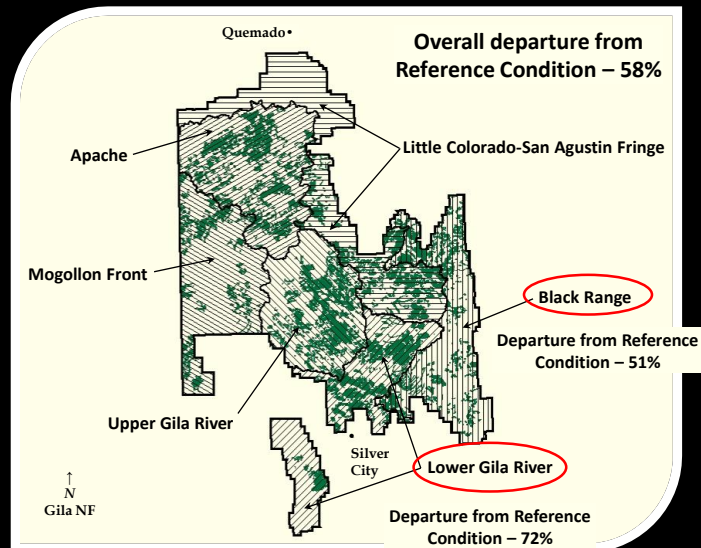
## Spatial Niche Analysis, Potential Gila NF's Contribution to Sustainability Off-forest within the Context Area



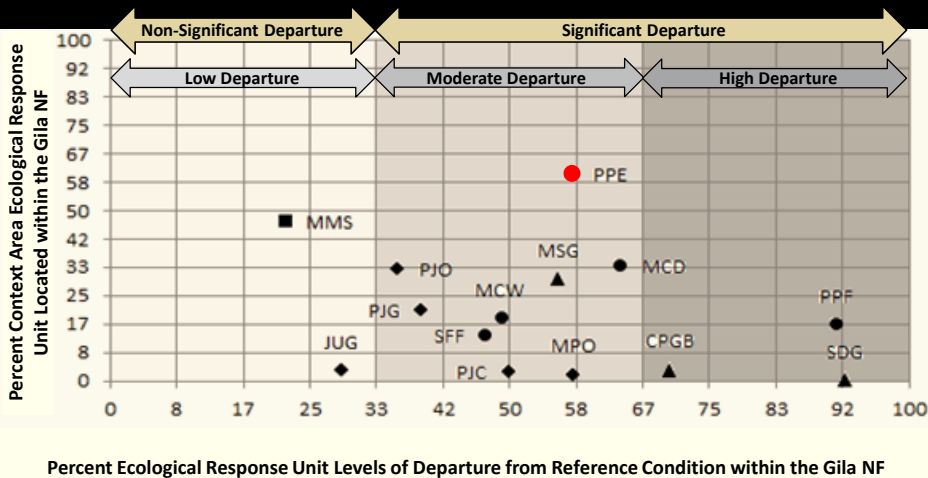
## Seral State Successional Structure Following State and Transition Modeling Based on Current Management Activities



## Ponderosa Pine/Evergreen Oak ERU within the Gila NF's Local Scale Units



## Current Departure from Reference Conditions for all Gila NF Upland Ecological Response Units



## Other Areas of Analysis within the Vegetation Assessment

- ✓ Vegetation
  - overstory and understory composition, cover, production, range condition and trend
- ✓ Fragmentation characteristics
  - patch size and trend
- ✓ Fire regime condition class
  - percent of ecological response unit in each class
- ✓ Climate change
  - vulnerability and uncertainty
- ✓ Coarse woody debris
  - size and amount per acre and trend
- ✓ Snags
  - size and number per acre and trend
- ✓ Carbon storage
  - above- and below-ground and trend

## Ecosystem Drivers and Stressors

### System Drivers

Predominate Climate  
Regime

Ecological Processes

Disturbance Regimes

### and Stressors

Climate Change

Weather Variability

Altered Ecological  
Processes

Altered Disturbance  
Regimes

Human Uses

- ✓ Duration & Return Interval
- ✓ Geographic Extent
- ✓ Reversibility/Manageability

## Risk to Ecological Integrity and Sustainability Matrix

CURRENT DEPARTURE FROM REFERENCE CONDITION (58%)	MAJOR SYSTEM STRESSOR(S)	REFERENCE CONDITION DEPARTURE TREND AFTER 100 YEARS (73%)		
		TOWARD REFERENCE CONDITION (> 5% CHANGE)	STATIC (± 5% CHANGE)	AWAY FROM REFERENCE CONDITION (> 5% CHANGE)
SIGNIFICANT DEPARTURE (34-100%)	NO	RISK ADDRESSED	LEGACY OF PAST MANAGEMENT OR DEVIATION DUE TO CURRENT MANAGEMENT	POTENTIAL FOR HIGH RISK
	YES (MODERATE VULNERABILITY)	POTENTIAL RISK	POTENTIAL FOR HIGH RISK	LIKELY HIGH RISK
NON- SIGNIFICANT DEPARTURE (0-33%)	NO	NO RISK	NO RISK	POTENTIAL RISK
	YES	POTENTIAL RISK	POTENTIAL RISK	POTENTIAL FOR HIGH RISK

SOURCES: USFS, 3/19/2010; SCHUSSMAN AND GORI, 2006; AND TRIEPKE, 2015

**Thank You!**

